

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
21 July 2005 (21.07.2005)

PCT

(10) International Publication Number
WO 2005/066754 A1

(51) International Patent Classification⁷: **G06F 3/033**,
H03K 17/968

(21) International Application Number:
PCT/IB2004/004388

(22) International Filing Date:
21 December 2004 (21.12.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0330055.5 24 December 2003 (24.12.2003) GB

(71) Applicant (for all designated States except US): **NOKIA CORPORATION** [FI/FI]; Keilalahdentie 4, FIN-02150 Espoo (FI).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **BARROWCLOUGH, Philip** [GB/GB]; 33 Sherwood Close, Hatch Warren, Basingstoke, Hampshire RG22 4DD (GB).

(74) Agents: **SLINGSBY, Philip, Roy et al.**; Page White & Farrer, 54 Doughty Street, London WC1N 2LS (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

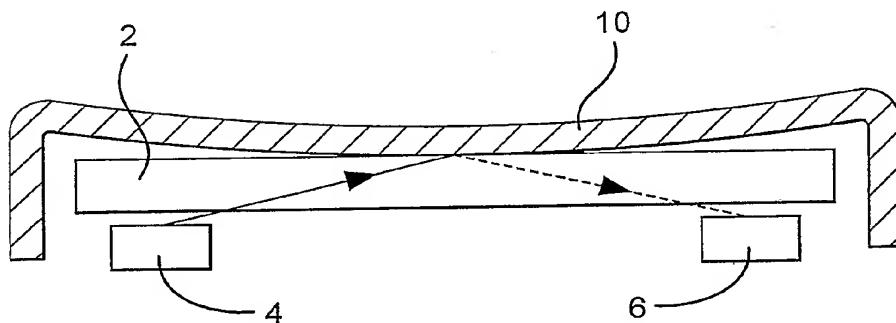
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: ANALOGUE NAVIGATION DEVICE



WO 2005/066754 A1

(57) Abstract: An analogue navigation device comprising a transmitter for generating a light signal, a receiver for receiving the light signal, a light guide having a surface for internally reflecting the light signal from the transmitter to the receiver, and an actuator having a surface, said actuator surface having at least a portion which is movable between a first position in which it is spaced apart from a portion of said light guide surface with a gas or fluid therebetween, and a second position in which it is in contact with said portion of said light guide surface, said portion of said light guide surface having a higher refractive index than said portion of said actuator surface and said portion of said actuator surface having a different refractive index than said gas or fluid, whereby in use the relative refractive index is changed at the contacted portion of the light guide surface thereby altering the light signal received by the receiver, said received signal being used to control the position of an element.